Applicant: Richard M. Broglie et al.

Serial No.: 09/643,579

Attorney's Docket No.: 07148-025003

/ CGL99/0008US04

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-22. (Canceled)

- 23. (Currently amended) A method for increasing the oleic acid content in plant seeds, comprising the steps of:
- a) introducing a recombinant nucleic acid construct into a plant, said construct comprising at least one seed-specific regulatory sequence operably linked in sense orientation to a full length delta-12 fatty acid desaturase coding sequence, wherein said sequence encodes a delta-12 fatty acid desaturase protein having a substitution of a Lys residue for (Asp/Glu) Asp or Glu in an (Ala/Gly)His(Asp/Glu)CysGlyHis conserved sequence amino acid region selected from the group consisting of His-Glu-Cys-Gly-His (SEQ ID NO:53), His-Asp-Cys-Gly-His (SEQ ID NO:55), or His-Asp-Cys-Ala-His (SEQ ID NO:54).
- b) obtaining progeny from said plant, said progeny producing said seeds having an oleic acid content of from about 69% to about 90%.
 - 24. (Canceled)
- 25. (Previously presented) The method of Claim 23, wherein said progeny produce seeds having a linoleic acid content of from about 1.0% to about 10.0%.

26-28. (Canceled)

29. (Previously presented) A recombinant nucleic acid construct effective for increasing oleic acid content when expressed in seeds, said construct comprising at least one seed-specific regulatory sequence operably linked in sense orientation to a delta-12 fatty acid

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desaturase coding sequence encoding a delta-12 fatty acid desaturase gene product having at least one mutation which renders said desaturase gene product non-functional, said mutation being the substitution of a Lys residue for X in a His-X-Cys-Y-His (SEQ ID NO:17) Asp or Glu in an amino acid region, wherein X is selected from the group consisting of Asp and Glu and Y is selected from the group consisting of Gly and Ala His-Glu-Cys-Gly-His (SEQ ID NO:53), His-Asp-Cys-Gly-His (SEQ ID NO:55), or His-Asp-Cys-Ala-His (SEQ ID NO:54).

30-36. (Canceled)

- 37. (Currently amended) The method of Claim 23, wherein said mutation is in a Ala-His-Glu-Cys-Gly-His conserved sequence (SEQ ID NO:23) amino acid region.
 - 38. (Canceled)
- 39. (Previously presented) The method of Claim 23, wherein said seeds have an oleic acid content of from about 74% to about 90%.
- 40. (Previously presented) The method of Claim 39, wherein said seeds have an oleic acid content of from about 80% to about 90%.
- 41. (Previously presented) The method of Claim 39, wherein said seeds have an oleic acid content of from about 75% to about 88%.
- 42. (Previously presented) The method of Claim 41, wherein said seeds have an oleic acid content of from about 80% to about 88%.
- 43. (Previously presented) The method of Claim 23, wherein said seeds have an α -linolenic acid content of from about 1.0% to about 10.0%.

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44. (Previously presented) The method of Claim 25, wherein said seeds have a linoleic acid content of from about 1% to about 6%.

45-48. (Canceled)

- 49. (Previously presented) The method of claim 23, wherein said plant is soybean.
- 50. (Previously presented) The method of claim 23, wherein said plant is rapeseed.
- 51. (Previously presented) The method of claim 23, wherein said plant is cotton.
- 52. (Previously presented) The method of claim 23, wherein said plant is corn.
- 53. (Previously presented) The method of claim 23, wherein said plant is safflower.
- 54. (Previously presented) The method of claim 23, wherein said seed-specific regulatory sequence is a bean β -phaseolin promoter.
- 55. (Previously presented) The method of claim 23, wherein said seed-specific regulatory sequence is an α subunit of soybean β -conglycinin promoter.
- 56. (Previously presented) The method of claim 23, wherein said seed-specific regulatory sequence is maize 18 kd oleosin promoter.
- 57. (Previously presented) The method of claim 23, wherein said seed-specific regulatory sequence is maize 15 kd zein promoter.

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58. (Previously presented) The method of claim 23, wherein said seed-specific regulatory sequence is a Brassica napin promoter.

59. (Canceled)